DOCUMENT RESUME

ED 223 909 CE 034 619

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TITLE Service the Carburetor Air Cleaner. Fuel System. Student Manual 1. Small Engine Repair Series. First Edition.
INSTITUTION East Texas State Univ., Commerce. Occupational Curriculum Lab.
SPONS AGENCY Texas Education Agency, Austin. Dept. of Occupational Education and Technology.
PUB DATE 82
NOTE 28p.; For related documents, see ED 222 717, ED 221 760-767, and CE 034 617-621.
AVAILABLE FROM Occupational Curriculum Laboratory, East Texas State University, Commerce, TX 75428.
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Auto Mechanics; Behavioral Objectives; *Disabilities; *Engines; Equipment; Hand Tools; High Interest Low Vocabulary Books; Job Skills; Learning Activities; Learning Disabilities; Mainstreaming; Mechanics (Process); Motor Vehicles; Power Technology; Secondary Education; *Special Education; Technical Education; Units of Study; Vocational Education
IDENTIFIERS *Automotive Fuel Systems; *Carburetors; *Small Engine Mechanics

ABSTRACT

This student manual, part of a small-engine repair series on servicing fuel systems, is designed for use by special needs students in Texas. The manual explains in pictures and short sentences, written on a low reading level, the job of servicing carburetor air cleaners. Along with the steps of this repair job, specific safety and caution information is frequently noted. To reinforce consistency in material presented to the slow learners, the pictures and written words correspond exactly with the pictures and wording on a corresponding audiovisual presentation. A progress chart for rating the students is included in the manual. (KC)

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STUDENT MANUAL 1

FUEL SYSTEM
SMALL ENGINE REPAIR SERIES

SERVICE THE CARBURETOR AIR CLEANER

Prepared by
Pamela Hill

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TEXAS EDUCATION AGENCY
AUSTIN, TEXAS 78701

CE034619

FIRST EDITION
1982

Frances Hyatt
EDITOR

Bob Norsworthy
ART DIRECTOR

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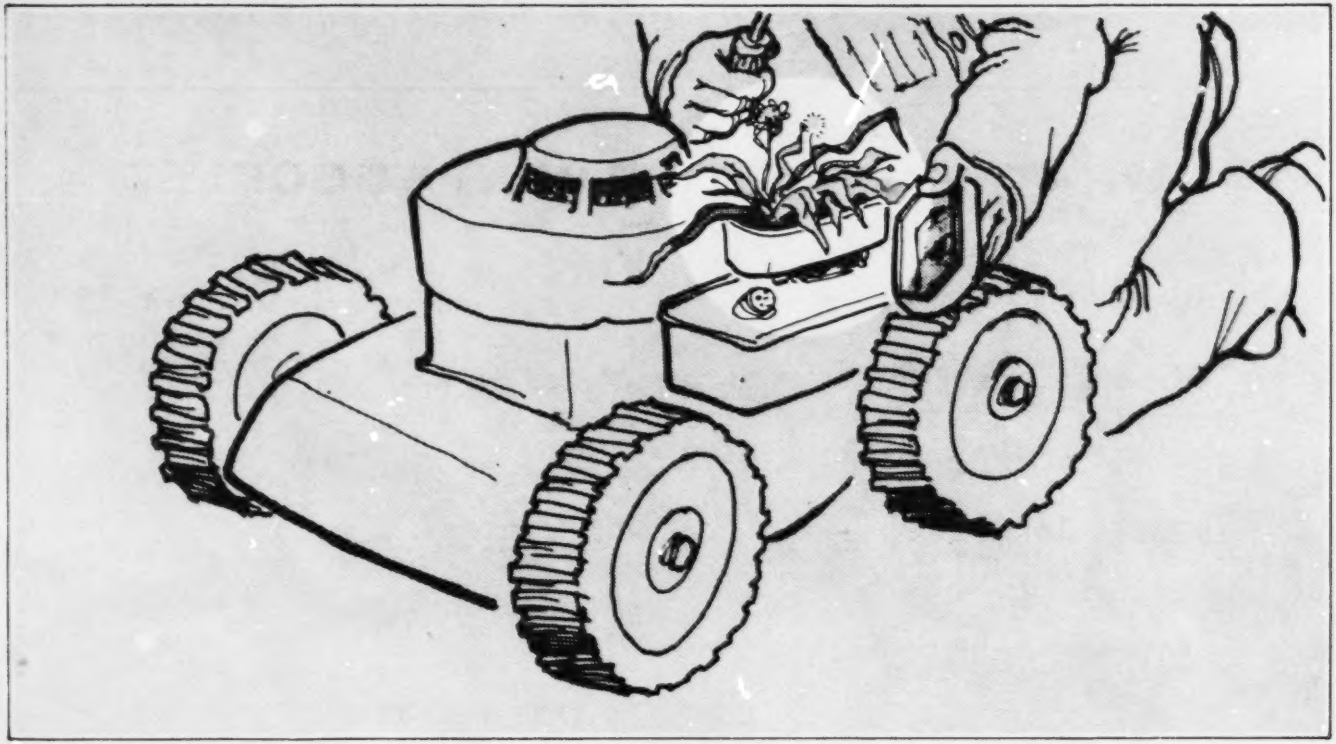
WHAT YOU WILL FIND IN THIS BOOKLET

The point of this booklet ..... Page 1

Tools and equipment for service the carburetor air cleaner (oil foam type) ..... Page 2

Steps for service the carburetor air cleaner (oil foam type) ..... Page 4

Can you service the carburetor air cleaner? ..... Page 21

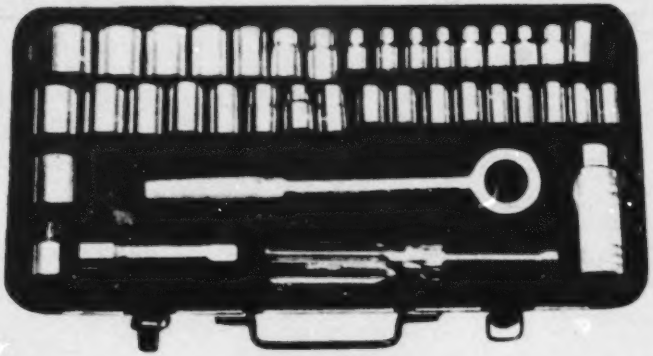


THE POINT OF THIS BOOKLET

As a small engine mechanic, you may have to service the air cleaner on a small gas engine. This booklet will help you learn what tools and equipment to use and all the steps of this job for servicing an oil foam air cleaner.

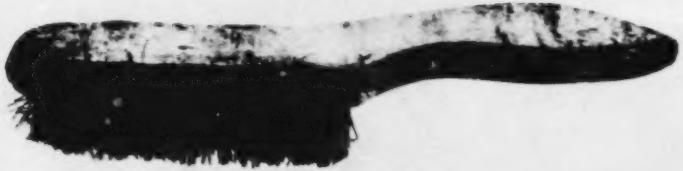
As you practice these steps on a real engine, you and your teacher can rate your progress on a chart on pages 21-23. Don't forget to follow the safety and good work habits that you have learned.

TOOLS AND EQUIPMENT:



socket set

flat-tip screwdriver



wire brush

safety glasses

pan of water

SOAP

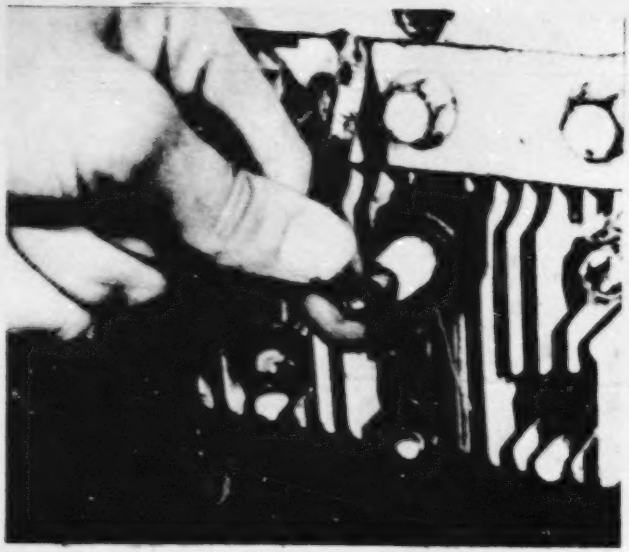
2 clean shop towels

clean motor oil

soap

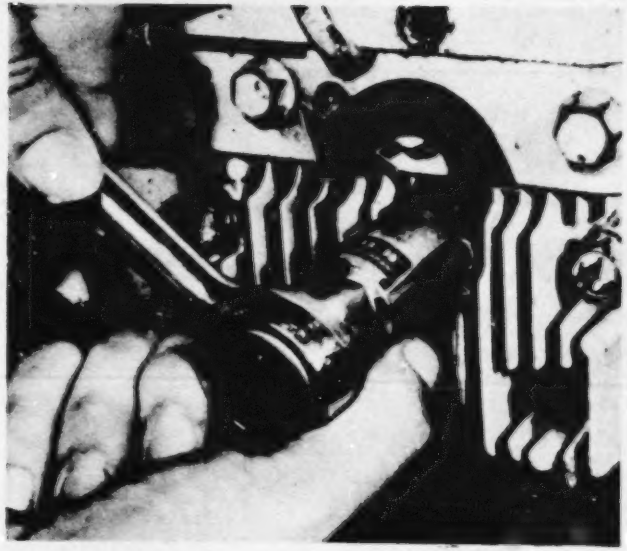
hand cleaner

STEPS:



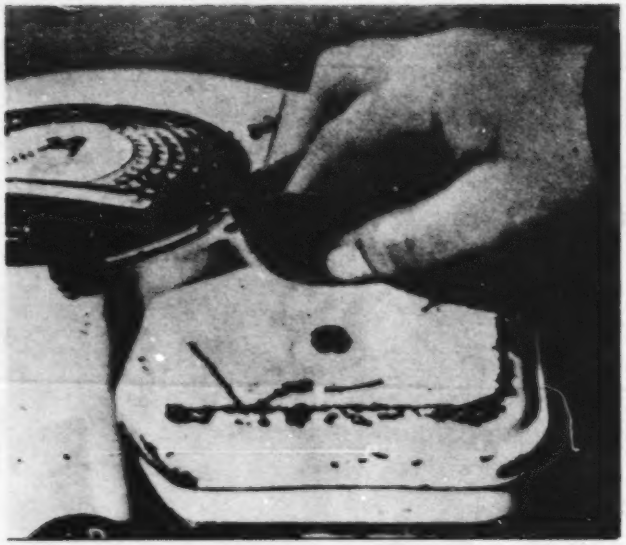
1. **Before beginning any work on an engine, always remove the spark plug wire.**

   Safety Tip: This will keep the engine from starting and hurting you.



2. **Remove the spark plug.**

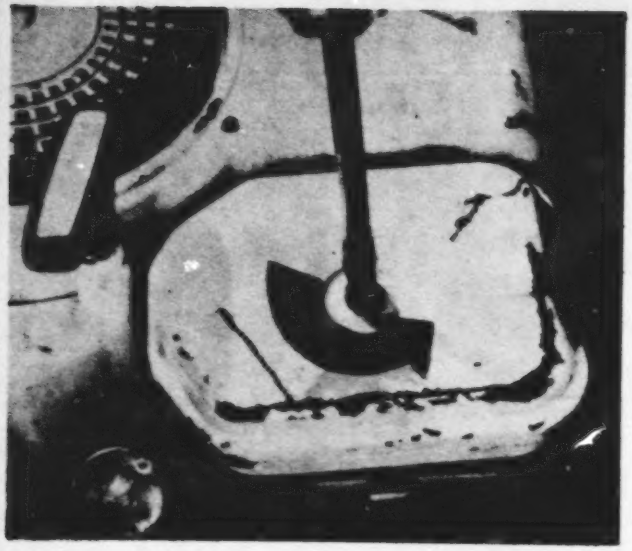
   Caution: Use a spark plug socket to remove the spark plug, and not some other tool that might damage the plug.



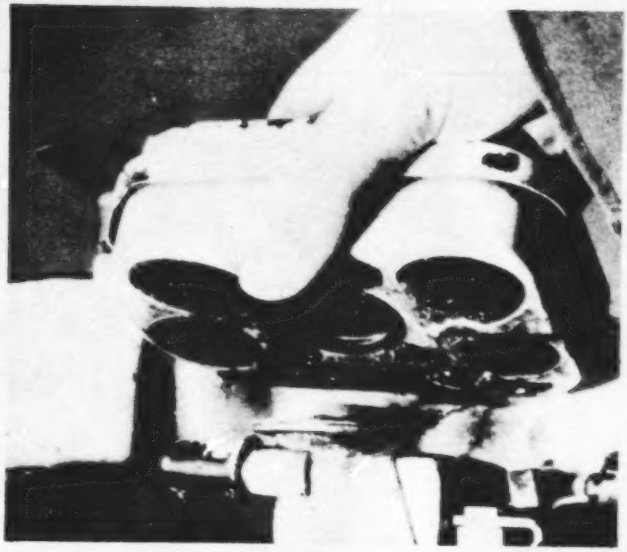
3. **Using a clean shop towel, wipe away any dirt from the air cleaner.**

   Note: This will keep loose dirt from getting into the carburetor and damaging the engine.

Safety Tip: If you use an air hose to blow away dirt around the air cleaner, remember to wear your safety glasses.

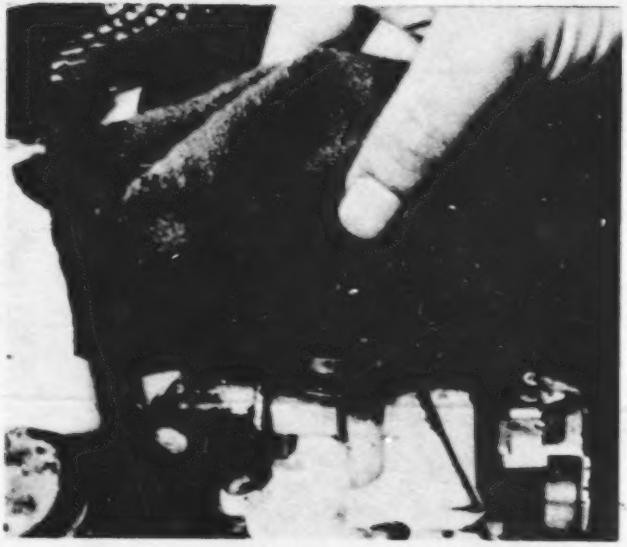


4. Unscrew the mounting bolt or wing nut that holds the air cleaner onto the carburetor. Set the bolt or wing nut aside.



5. Carefully remove the air cleaner from the carburetor.

Caution: Be careful not to drop any dirt into the carburetor because dirt will seriously damage the engine.

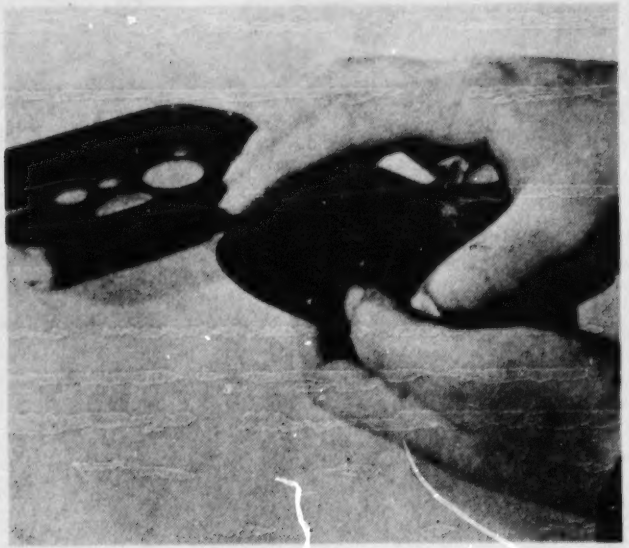


6. Lay a clean shop towel across the carburetor air intake.

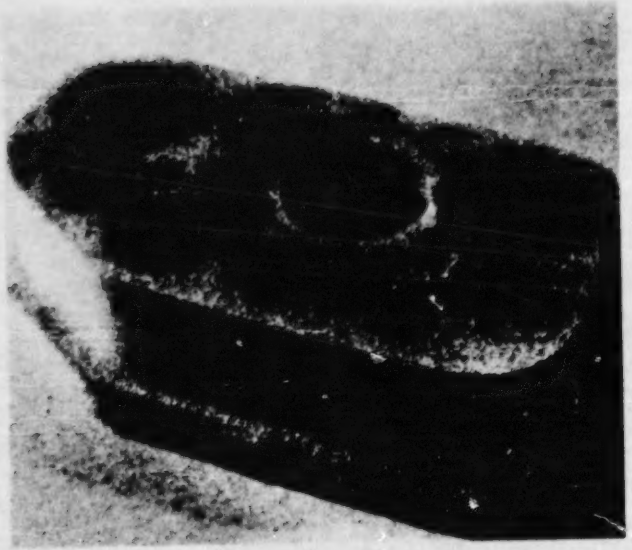
Note: This will keep dirt from getting into the carburetor while you are servicing the air cleaner.

7. Pull the air cleaner cover off the body.

8. Remove the spacer and element. Set the air cleaner parts aside.

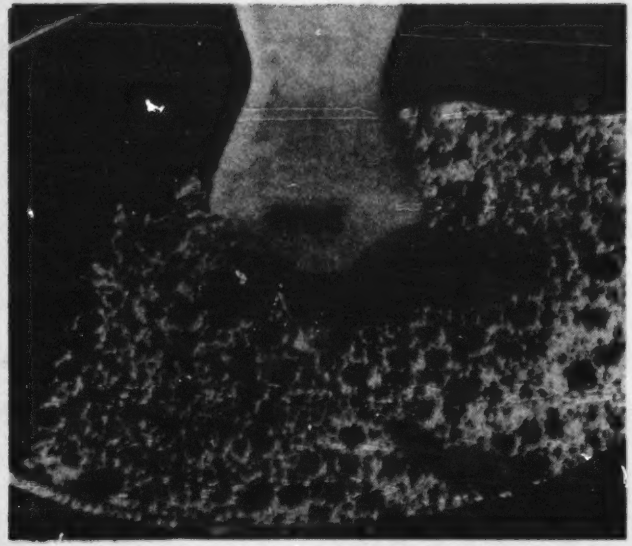


9. If the element is made of foam, squeeze it with your hand to see if it is brittle and crumbles.

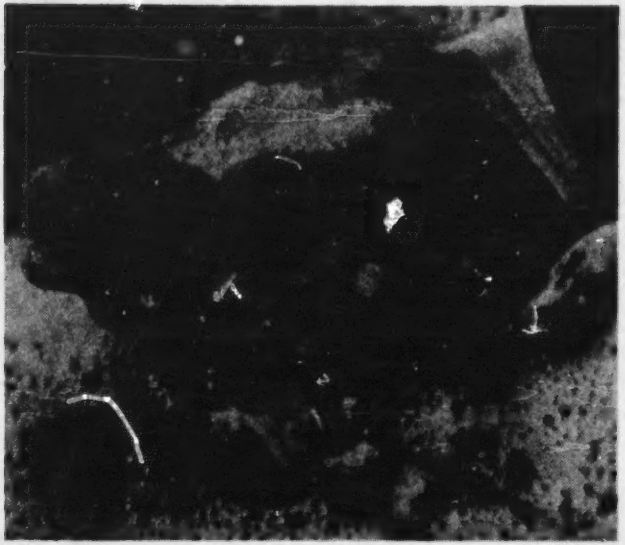


10. If the foam element is brittle and crumbles in your hand, then you will want to replace it with a new foam element.

Note: If the element is a paper type and it is covered with dirt, replace it with a new paper element.

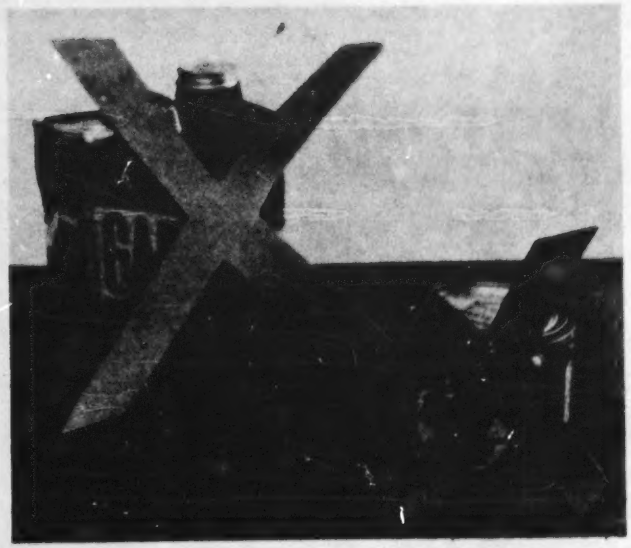


11. To clean the air cleaner parts, mix a small amount of soap and warm water in a cleaning pan.



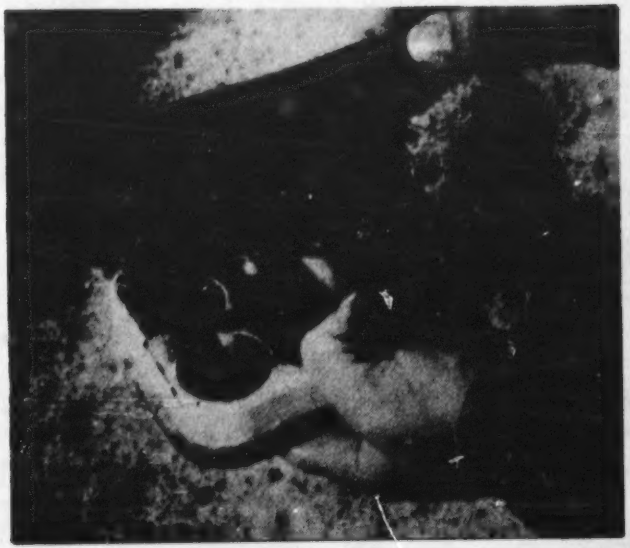
12. Wash the foam element in the soapy water by squeezing and releasing the element in your hand.

Note: This will wash out all the dirt and grease.



Safety Tip: Never use gasoline or cleaning fluid to wash a foam element because these will make the element brittle, and gasoline is dangerous.

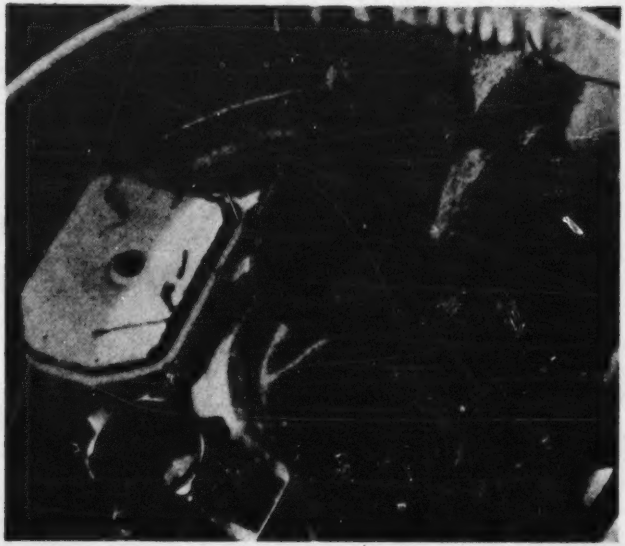
Note: Cleaning fluid may be used to wash a metal mesh element.



13. Using a wire brush, wash the other air cleaner parts.

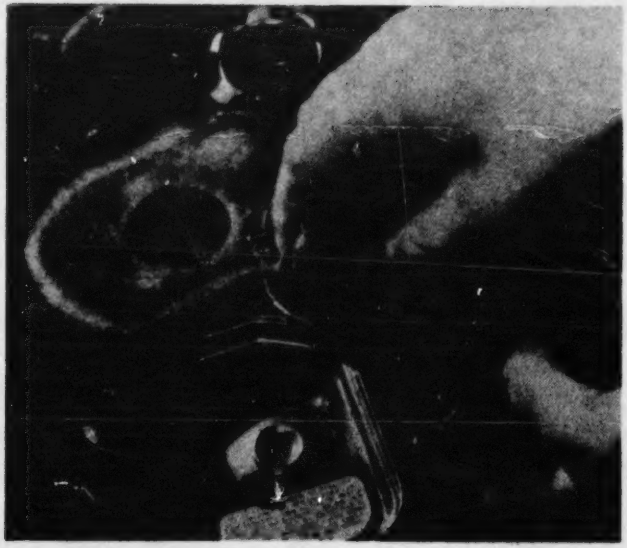
16

14. Empty the pan of soapy water, fill it with clean water, and then rinse all of the air cleaner parts.

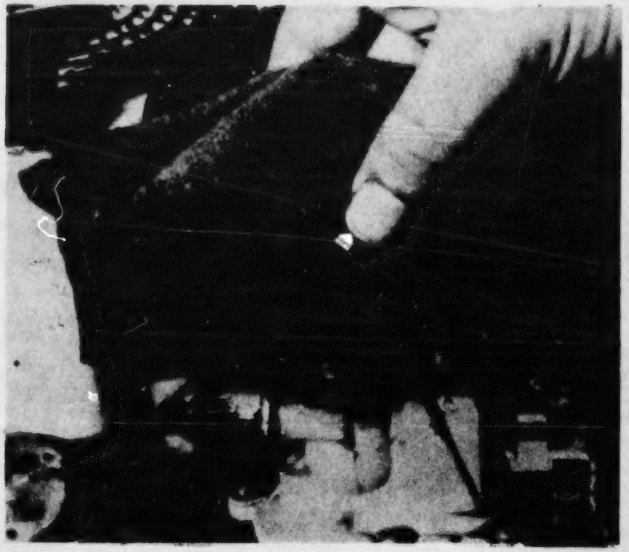


15. Dry the element by squeezing it in a clean shop towel several times. Set the element aside to dry completely.

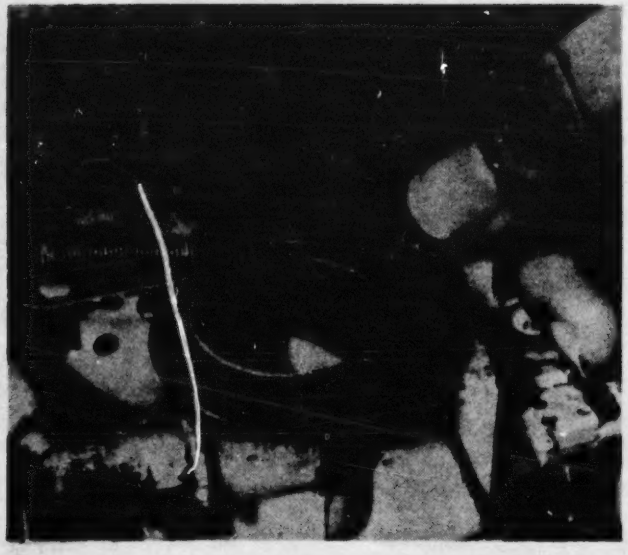
Note: The element may also be dried with an air hose.



16. Dry the other air cleaner parts with the shop towel.

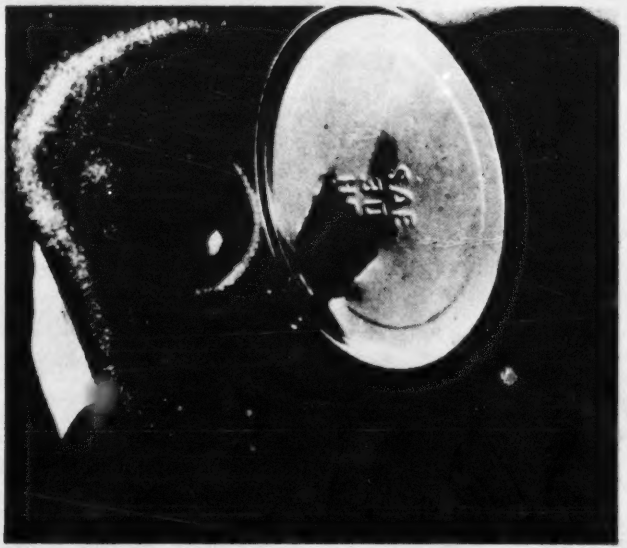


17. Remove the clean shop towel from the carburetor air intake.



18. With a dry shop towel, wipe off the dirt and grease from around the carburetor air intake and gasket.

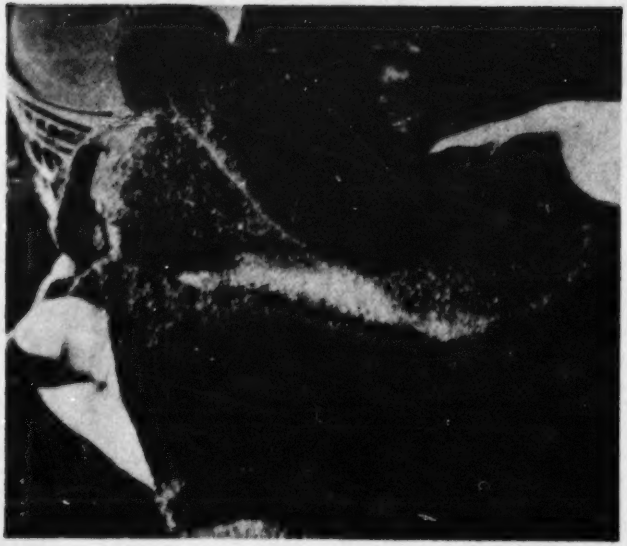
    Note: If the gasket is broken, replace it with a new one.

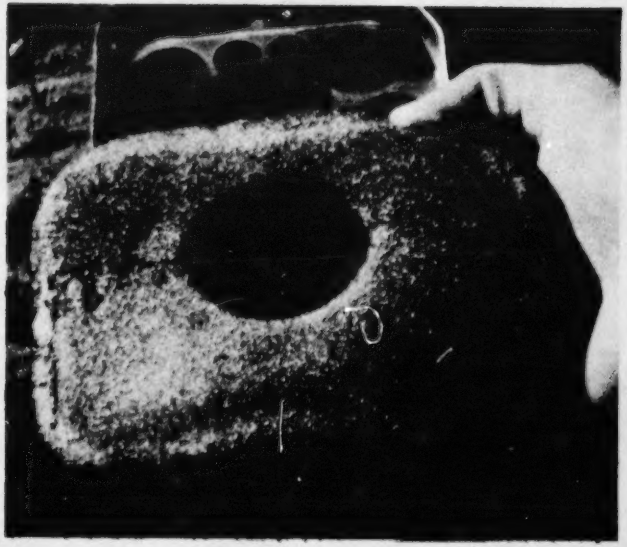


19. When the element is dry, pour about 2 tablespoons of clean motor oil on it.

    Caution: Use the same type oil that is used in the crankcase.

19



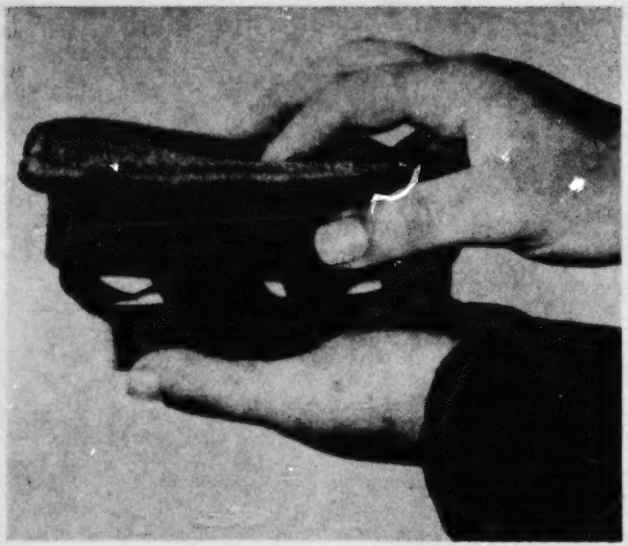


20. Put the oiled element in a clean shop towel and squeeze out the excess oil.

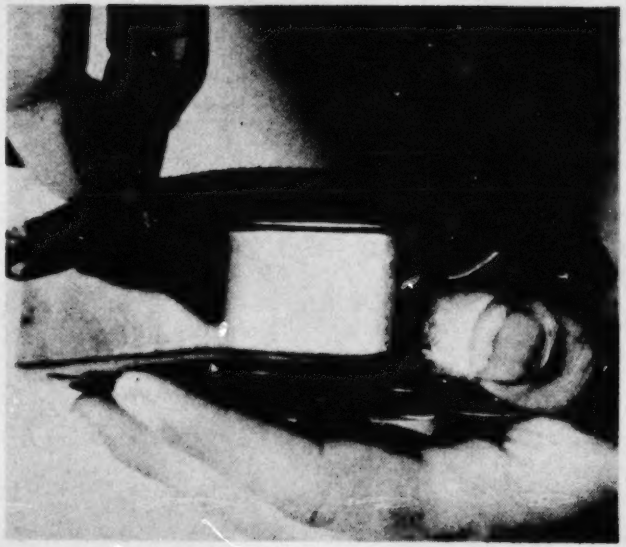
Caution: If too much oil is left in the element, oil will be drawn into the engine and will foul the spark plug.

Note: Squeezing the oiled element will help to place the oil evenly all over the element.

Note: If the element is a metal mesh type, dip it into clean oil and let the excess drip off.

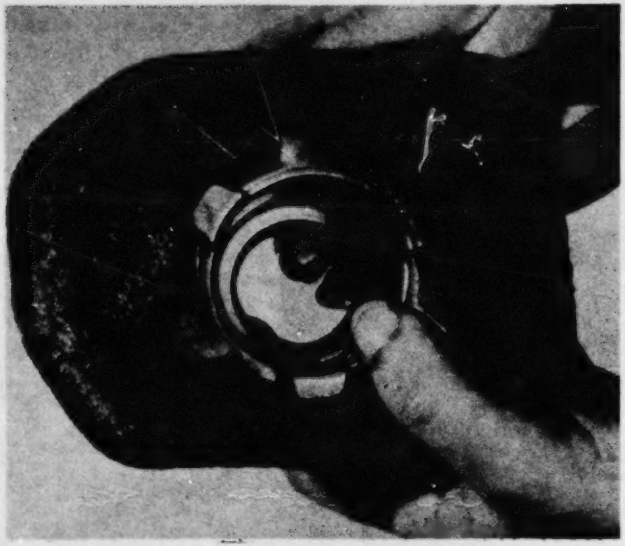


21. To reassemble the air cleaner parts, first place the element in the body.

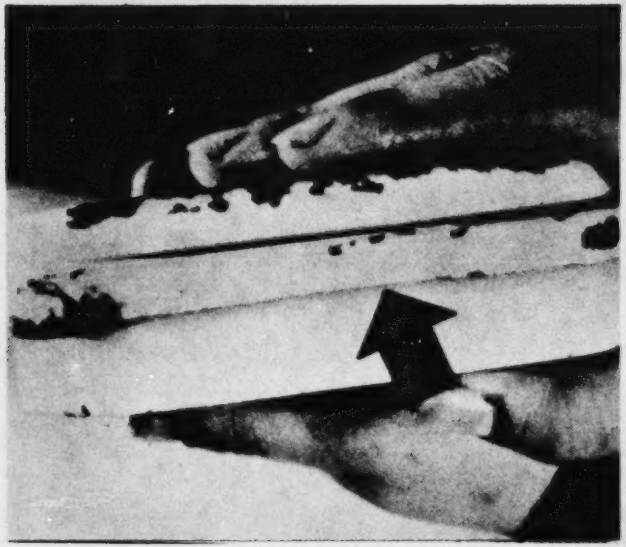


22. Fit the element over the lip of the body so that the lip will give a protective seal or tight fit.

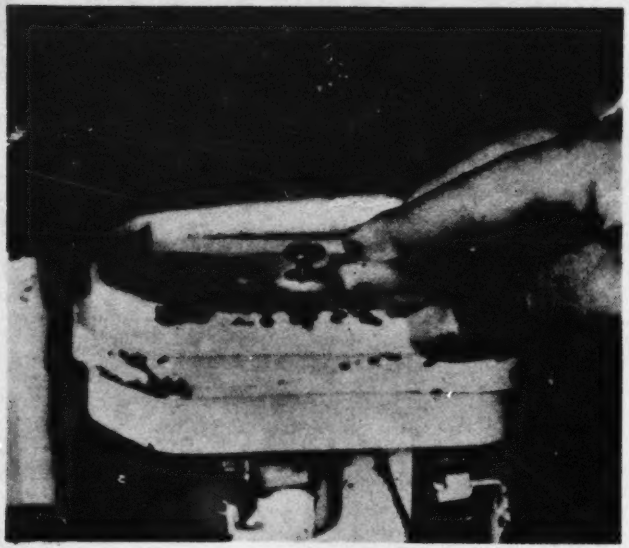
21



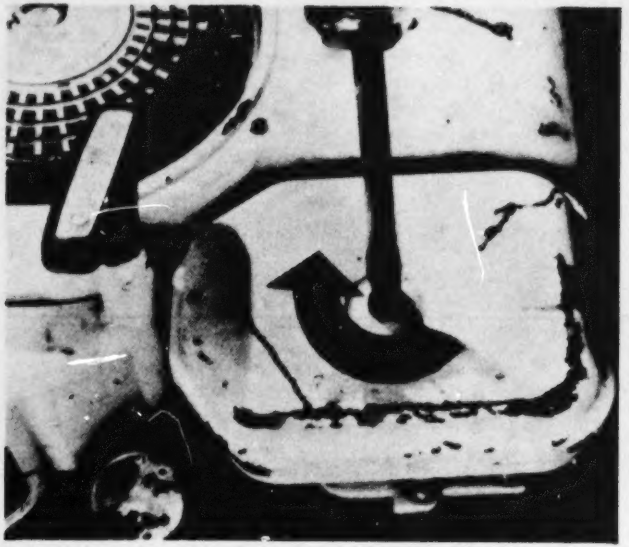
23. Place the spacer into the element so that one of the low points on the spacer is toward a narrow edge of the element.



24. Snap the cover on the air cleaner body. Check to see that there is a tight fit all around the lip.



25. Place the air cleaner on top of the gasket and carburetor air intake.

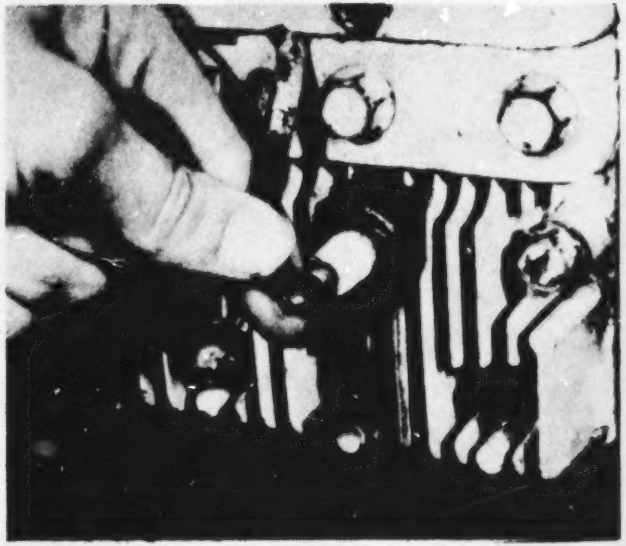


26. Securely tighten the mounting bolt or wing nut that holds the air cleaner on the carburetor.

    Caution: Do not overtighten the bolt because this could damage the carburetor or choke.

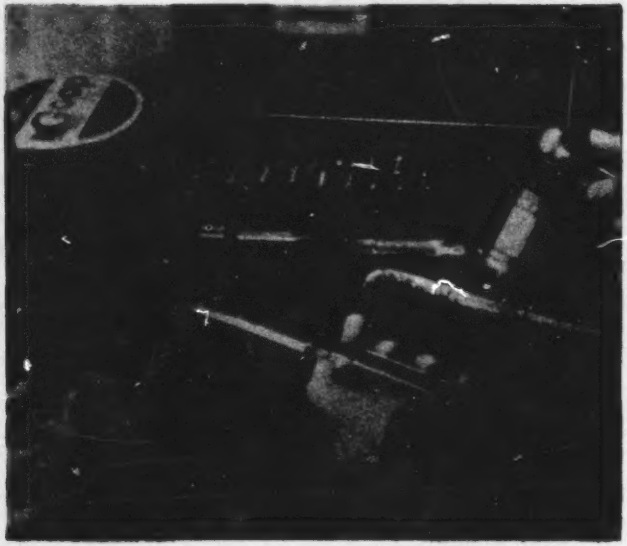
27. Replace the spark plug on the engine.

Caution: Do not overtighten the spark plug because the plug could easily break.



28. Replace the spark plug wire on the spark plug.

24



29. Clean up the work area. Clean the tools and return them to the tool room. Empty dirty water and put up dirty shop towels.

30. Wash your hands with hand cleaner, and then with soap to remove dirt and grease.

CAN YOU SERVICE THE CARBURETOR AIR CLEANER?

Each day, practice doing this job and fill in the chart on the next pages. Use a rating number below that describes how well you can do the steps of the job. By the end of 10 days you will see your progress.

RATING	MEANING
1 =	Can do simple parts of this job, but still needs to be shown how to do most of it.
2 =	Can do most parts, but may need help on hard parts.
3 =	Can do all parts without help. Ready for job entry with shop supervision.

CHART FOR CAN YOU SERVICE THE CARBURETOR AIR CLEANER?	DAYS									
	1	2	3	4	5	6	7	8	9	10
1. Assembles and uses tools correctly										
2. Prepares the engine to service the air cleaner (Steps 1-3)										
3. Removes and disassembles the air cleaner (Steps 4-8)										
4. Checks air cleaner element for brittleness (Steps 9-10)										
5. Cleans air cleaner parts and carburetor air intake (Steps 11-18)										

CHART FOR CAN YOU SERVICE THE CARBURETOR AIR CLEANER?	DAYS									
	1	2	3	4	5	6	7	8	9	10
6. Oils the air cleaner element (Steps 19-20)										
7. Reassembles air cleaner parts (Steps 21-24)										
8. Replaces air cleaner on top of gasket and carburetor (Steps 25-26)										
9. Replaces spark plug and spark plug wire (Steps 27-28)										
10. Cleans up work area and washes dirty hands (Steps 29-30)										